4.4.4.4 PBD 019 - Building 776/777 Cluster Closure Project

Approach

The following comments, concerns and recommendations are the result of the team's review of those portions of the 2006 Closure Project Baseline (CPB) Schedule we felt were critical to site closure as scheduled in 2006. We did not review all of the 2006 CPB Schedule assumptions, scope and sequence; we reviewed a representative set of the Work Authorization Documents (WADs) within several critical Project Baseline Descriptions (PBDs). The comments below are organized by Work Authorization Documents (WADs) and Work Breakdown Structures (WBSs). The WADs reviewed in connection with the B776/777 Cluster Closure are:

- WAD 035 776/777 Cluster Project

Basis & Assumption Issues

WAD 035 – 776/777 Cluster Project

	K-H Project Management Plan Assumption	Comment
1.	The facility will maintain a 90% availability for Nuclear Operations and will maintain a production efficiency of 85%.	The basis for this can not be verified with the available information. It is also unclear how this in incorporated into the 2006 CPB Schedule activity durations
2.	No significant, unplanned DNFSB recommendations will be received.	It appears unreasonable to plan for "No significant" DNFSB.
3.	The regulatory agencies will adhere to document review schedules as described in RFCA.	It is not known at this time if the appropriate regulatory agencies have been provided K-H's forecasts for approvals and if they have accepted the approval forecasts.
4.	The Regulatory agencies will approve the concept of an overall IA Characterization Plan that enables site specific planning information to be added as an addenda.	It is not clear from the information who will approve this Plan or what impact it will have on the schedule if it is not approved.

Scope Issues

1.1.06.12.03 – 776/777 Cluster Deactivation

It appears that the 2006 CPB Schedule does not include activities for the Deactivation sub-tasks including Characterization, and some Final Physical Deactivation activities as defined in PBD 19. We recommend that K-H identify where time is allotted for these activities or make the necessary changes in the 2006 CPB Schedule. Below is a quote from this WBS description in the PBD 19 documentation.

> *This element includes the sub-tasks of: Characterization, Planning & Project Management, Administrative Deactivation, Authorization Basis Changes, Initial Physical Deactivation, and some Final Physical Deactivation activities. Examples of specific activities within deactivation include: removal of hazardous and non hazardous materials, emptying storage areas to reduce fire loading, RCRA closures, and draining solutions from tanks and equipment. A physical inventory shall be completed and an economic disposition determination shall be made for unneeded property. The end-state of this element will be achieved when the facility is determined to be in a safe, shut-down status with minimal mortgage costs while awaiting decontamination, dismantlement, and demolition activities.*

Schedule Development Issues

1. We note that there are over 50 activities (several examples are shown below) within WAD 019 which do not appear to meet K-H's Standard 10 Scheduling requirement. This creates a concern for the schedule accuracy based on the level of detail as reflected by the activity durations:

   A. Activity Durations/Level of Detail. Current FY activities and FY+1 activities will generally be two working weeks to three months in duration, except for procurement, regulatory actions, or level-of-effort activities, which do not have intermediate points for performance measurement. Longer term durations for true level-of-effort activities are permissible. Activities scheduled from FY+2 through completion will have durations reflecting the level of scope development.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D5F0199M02	Glove Inspection/Changes B776/7 FY-99 20% of TTL	94	16-Nov-98	31-Mar-99	1
D5F0299M05	Pressure Safety JCO (Major IWCP)	63	1-Oct-98	31-Dec-98	1
D5F0599N05	A/B Imp - Project Management/Administrative Spt	228	1-Oct-98	30-Sep-99	0
D5F0599N92	A/B Imp Design Features (TBD1)	110	1-Oct-98	26-Mar-99	0
D5F0599NA5	A/B Imp Seal Cable Hole	113	1-Oct-98	31-Mar-99	62
D5F0599NA6	A/B Imp Fire Retardant Coating	113	1-Oct-98	31-Mar-99	62
D5HD299MD1	Review and Incorp RFFO Comments on DOP	83	1-Oct-98	29-Jan-99	0
D5HD500D10	FY-00 Drain Ancillary Piping Systems	192	3-Jan-00	29-Sep-00	1
D5HD500G00	FY-00 B776/777 Glovebox Deactivation	127	1-Oct-99	31-Mar-00	0
D5HD500R10	FY-00 B776/777 Room Deact and Equipment Removal	192	3-Jan-00	29-Sep-00	1
D5HD500R15	FY-00 Rem Classified Telecom Sys/Docs from Rooms	127	3-Apr-00	29-Sep-00	1
D5HD500T05	FY-00 Drain SRV Tanks (SR3, 4 & 5)	127	3-Apr-00	29-Sep-00	1
D5HD500T10	Drn Tks T360,T370,T344 & T345 to RCRA Stable	192	3-Jan-00	29-Sep-00	1
D5HD500T15	FY-00 Drain FBI Pilot Tanks to RCRA Stable	192	3-Jan-00	29-Sep-00	1
D5HD599A01	FY-99 Disposition B776/777 Actuators	82	3-Dec-98	12-Apr-99	108
D5HD599G05	FY-99 Remove Oils/Solutions from GBs	126	1-Oct-98	31-Mar-99	0
D5HD599G16	FY-00 Remove Sources from Gloveboxes	191	1-Oct-99	30-Jun-00	0
D5HD599R10	FY-99 Remove Classified from Rooms	191	4-Jan-99	30-Sep-99	0
D5HD599R15	FY-99 Rem Microwave Samples from B701	191	4-Jan-99	30-Sep-99	0
D5HD599T20	FY-99 Drain Low Level Oils Tks B776/777	191	4-Jan-99	30-Sep-99	0
D5J2300040	B776/777 Set 23 Dismantlement Tasks	125	16-Dec-99	30-Jun-00	0
D5J2400040	B776/777 Set 24 Dismantlement Tasks	153	1-Feb-00	28-Sep-00	0
D5P0102010	B776/777 MAA Closure Execution Activities	64	3-Apr-00	30-Jun-00	0
D5P9902010	FY-99 B776/777 SNM Verification Walkdowns	64	1-Jul-99	30-Sep-99	0
D5P9902020	FY-99 B776/777 Remove Holdup Area 1	62	1-Oct-98	30-Dec-98	192
D5P9902120	FY-99 B776/777 Remove Holdup Area 11	61	27-May-99	23-Aug-99	27
D5P9902140	FY-99 B776/777 Remove Holdup Area 13	61	7-Jul-99	30-Sep-99	0
D5P9902150	FY-99 B776/777 Holdup Mtl Xfer to B707	191	4-Jan-99	30-Sep-99	1
D5P9902160	FY-99 B707 Thermal Stabilization of B776 Holdup	171	1-Feb-99	30-Sep-99	1
D5P99SCAN0	B776/777 Holdup Scans/Drum Movement	110	9-Apr-99	30-Sep-99	0

We recommend that K-H review the Standard 10 requirement and the 2006 CPB Schedule exceptions as well as make the necessary modifications.

2. It appears that the WBS 1.1.06.12.01.01, 1.1.06.12.01.02, 1.1.06.12.01.03, and 1.1.06.12.01.04 contain LOE activities for surveillance, maintenance, tech support and operations management, many of which do not contain interface logic with the Building decommission activities. For FY99 and FY00 there appears to be sufficient information available to show the appropriate interdependency relationship between the support LOE activities and the appropriate decommission activities. Appropriate interdependency relationships are needed in order to accurately determine the impact of decommissioning changes on the LOE activities, i.e. if decommissioning gets delayed there could be a potential impact to the LOE durations and cost. We recommend that K-H review

the scope and interfaces of this scope and make the necessary schedule revisions to show the activity interdependencies.

WAD 035 – 776/777 Cluster Project

1.1.06.12.02 – 776/777 Cluster SNM Removal Operations

1. It appears that the following activities representing SNM removal have the start Milestone WPD 35 as their predecessor and all but one have start constraints. The lack of relationships between areas indicates that the work in the areas is independent of each other from a sequencing and resource perspective. The basis for these constraints is unknown. We recommend that the constraints be explained and replaced with appropriate interface logic to reflect the sequencing plan.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D5P9902020	FY-99 B776/777 Remove Holdup Area 1	62	1-Oct-98	30-Dec-98	192
D5P9902030	FY-99 B776/777 Remove Holdup Area 2	60	26-Oct-98*	21-Jan-99	177
D5P9902040	FY-99 B776/777 Remove Holdup Area 3	60	18-Nov-98*	15-Feb-99	160
D5P9902050	FY-99 B776/777 Remove Holdup Area 4	60	15-Dec-98*	10-Mar-99	143
D5P9902060	FY-99 B776/777 Remove Holdup Area 5	59	11-Jan-99*	1-Apr-99	127
D5P9902070	FY-99 B776/777 Remove Holdup Area 6	60	2-Feb-99*	26-Apr-99	110
D5P9902080	FY-99 B776/777 Remove Holdup Area 7	60	25-Feb-99*	19-May-99	93
D5P9902090	FY-99 B776/777 Remove Holdup Area 8	60	22-Mar-99*	14-Jun-99	76
D5P9902100	FY-99 B776/777 Remove Holdup Area 9	60	13-Apr-99*	07-Jul-99	60
D5P9902110	FY-99 B776/777 Remove Holdup Area 10	60	6-May-99*	30-Jul-99	43
D5P9902120	FY-99 B776/777 Remove Holdup Area 11	61	27-May-99*	23-Aug-99	27
D5P9902130	FY-99 B776/777 Remove Holdup Area 12	60	21-Jun-99*	14-Sep-99	12
D5P9902140	FY-99 B776/777 Remove Holdup Area 13	61	7-Jul-99*	30-Sep-99	0

* asterisk indicates manually constrained date

2. We note that the activities above have relatively the same activity Original Duration and the same budgeted cost of $39,766.88. We recommend that K-H review the Original Duration and Budget Costs to ensure that they accurately reflect the unique Area characteristics as noted during the detailed walkdowns referenced in the PBD.

3. The following activities are concurrent with the SNM Holdup Removal forecast for October 1, 1998 through September 30, 1999. It appears that these activities may logically continue beyond September 30, 1999 for the processing of the material that is removed near September 30, 1999. We recommend that K-H verify that the logic for these activities accurately reflects their execution plan as well as safe and reasonable practices.

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float
D5P9902005	FY-99 B776/777 SNM Holdup Removal Project Mgmt	254	1-Oct-98	30-Sep-99	1
D5P9902160	FY-99 B707 Thermal Stabilization of B776 Holdup	171	1-Feb-99	30-Sep-99	1
D5P9902190	FY-99 Holdup Removal Planning for FY-00 5 Areas	129	31-Mar-99*	30-Sep-99	0
D5P99SCAN0	B776/777 Holdup Scans/Drum Movement	110	9-Apr-99*	30-Sep-99	0
D5P9902010	FY-99 B776/777 SNM Verification Walkdowns	64	1-Jul-99*	30-Sep-99	0

* asterisk indicates manually constrained date

4. The B776/777 Completion of Removal of all SNM Requiring Stabilization (Activity D5PMIL323) is forecast to complete May 22, 2003 while the MAA Closure forecast to complete nearly three years earlier on June 30, 2000. The scope of this remaining work is unclear since there appears to be no activities for Final Physical Deactivation with the exception of the following activities included in 1.1.06.12.03.05 Initial Physical Deactivation:

Activity ID	Activity Description	Original Duration	Early Start	Early Finish	Total Float	Budgeted Cost
D5HD500R35	Remove Remaining Legacy Waste Drums	254	1-Oct-99	29-Sep-00	1	$ 289,754
D5HD599R25	FY-00 Rem Loose Haz Materials from Rooms	254	1-Oct-99	29-Sep-00	1	$ 9,970
D5HD599T25	FY-00 Drain/Remove Trichlorethane Line	254	1-Oct-99	29-Sep-00	1	$ 60,291
D5HD500D10	FY-00 Drain Ancillary Piping Systems	192	3-Jan-00	29-Sep-00	1	$ 279,370
D5HD500R10	FY-00 B776/777 Room Deact and Equipment Removal	192	3-Jan-00	29-Sep-00	1	$ 184,097
D5HD500T10	Drn Tks T360,T370,T344 & T345 to RCRA Stable	192	3-Jan-00*	29-Sep-00	1	$ 52,120
D5HD500T15	FY-00 Drain FBI Pilot Tanks to RCRA Stable	192	3-Jan-00	29-Sep-00	1	$ 52,189
D5HD599R40	Clean out Advanced Size Reduction Area	174	27-Jan-00	29-Sep-00	0	$ 145,775
D5HD500MS2	FY-00 Clean out GBs in Sets 1,14,20,29,41 and 69	0		31-Mar-00	0	$ 0
D5HD500R15	FY-00 Rem Classified Telecom Sys/Docs from Rooms	127	3-Apr-00*	29-Sep-00	1	$ 56,292
D5HD500T05	FY-00 Drain SRV Tanks (SR3, 4 & 5)	127	3-Apr-00	29-Sep-00	1	$ 104,241
D5HD500MS8	FY00 Comp Rem Radioact Sources from GB&Rms	0		30-Jun-00	0	$ 0
D5HMILE320	FY00-T5 Drain Mixed Residue Tanks Complete	0		28-Sep-00	1	$ 0
D5HD500M01	FY-00 Complete SR3,4&5 Tank Draining	0		29-Sep-00	1	$ 0
D5HD500MS1	Comp Draining of Rem Tanks/Ancillary Eq to RCRA	0		29-Sep-00	1	$ 0
D5HD599MS5	FY-00 Comp Rem of Loose Haz Mtls from Rms	0		29-Sep-00	1	$ 0
D5HMILE499	B776/777 Complete Legacy Waste Removal	0		29-Sep-00	1	$ 0
D5HD500T20	FY-01 Drain to RCRA stable Equip in Rm 146	253	2-Oct-00	28-Sep-01	1	$ 245,203
D5HD501R05	FY-01 B776/777 Room Deact and Equipment Removal	253	2-Oct-00*	28-Sep-01	1	$ 742,749
D5FMILE392	B776/777 Deactivation Complete	0		28-Sep-01	1	$ 0
D5HD500MS3	FY-01 Comp Rem of Loose Haz Mtls, Rms	0		28-Sep-01	1	$ 0
D5HMILE465	Complete B776/777 Excess Property Removal	0		30-Sep-03	1	$ 0
	TOTAL					**$2,222,051**

* asterisk indicates manually constrained date

We recommend that K-H verify that the assumptions to close the MAA with the amount of outstanding deactivation work as anticipated between June 30, 2000 and May 22, 2003 are in accordance with DOE's assumptions and accurately reflect that scope in the 2006 CPB Schedule.

5. Of the 84 Start Set Decommissioning activities in the 2006 CPB Schedule, 70 have the same predecessor (Complete Set 17 Decommissioning), 11 have a predecessor of Initiate B776/777 Decommissioning and the last three differ completely. Additionally, of the 84 Start Set Decommissioning activities, 69 have start constraints. The basis for these constraints can not be determined with the available information. We recommend that the constraints be explained and replaced with appropriate logic to reflect the sequencing plan.

6. The sequencing of sets as reflected in the 2006 CPB Schedule was compared to the Building 776/777 - 2006 Set Prioritization received from the K-H Integration & Controls staff. It appears that the 2006 CPB Schedule forecasts are more compressed than the forecasts shown in the Set Prioritization Exhibit (attached at end of this section). For example many of the Set Prioritization sets forecast for FY02 are forecast for FY01 by the 2006 CPB Schedule. We recommend that K-H confirm which sequencing is current and make the necessary 2006 CPB Schedule modifications.

7. There are several activities with the description Project Specific Long Lead Procurement and Dismantlement Tasks within the Decommission set WBS that often have start constraints and therefore create non-work periods within the set sequencing. Figures A and B show two examples. The basis for these constraints can not be determined with the available information. We recommend that the constraints be explained and removed if necessary.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
1.1.06.12.04.64 B776/7-SARF (AREA 512, 513, 515, 517, 51				
D5J6400MS1	B776/777 Start Set 64 Decommissioning	0	02FEB00*	
D5J6400010	B776/777 Set 64 Planning and Engineering	58	02FEB00	02MAY00
D5J6400020	B776/777 Set 64 Proj Specif Long Lead Procurem't	45	02OCT00*	12DEC00
D5J6400030	B776/777 Set 64 Isolation and Containment	80	13DEC00	18APR01
D5J6400040	B776/777 Set 64 Dismantlement Tasks	162	16JAN01	27SEP01
D5J6400MF1	B776/777 Complete Set 64 Decommissioning	0		27SEP01

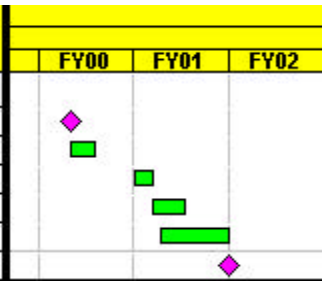


Figure A

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
1.1.06.12.04.73 B776/7-REMAINDER OF 2D FLOOR EQUIPMENT N				
D5J7300MS1	B776/777 Start Set 73 Decommissioning	0	01FEB01*	
D5J7300010	B776/777 Set 73 Planning and Engineering	58	01FEB01	02MAY01
D5J7300020	B776/777 Set 73 Proj Specif Long Lead Procurem't	56	03MAY01	31JUL01
D5J7300030	B776/777 Set 73 Isolation and Containment	26	01AUG01	11SEP01
D5J7300040	B776/777 Set 73 Dismantlement Tasks	58	01OCT01*	02JAN02
D5J7300MF1	B776/777 Complete Set 73 Decommissioning	0		02JAN02

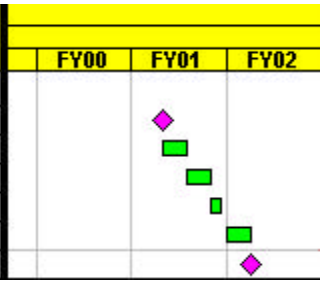


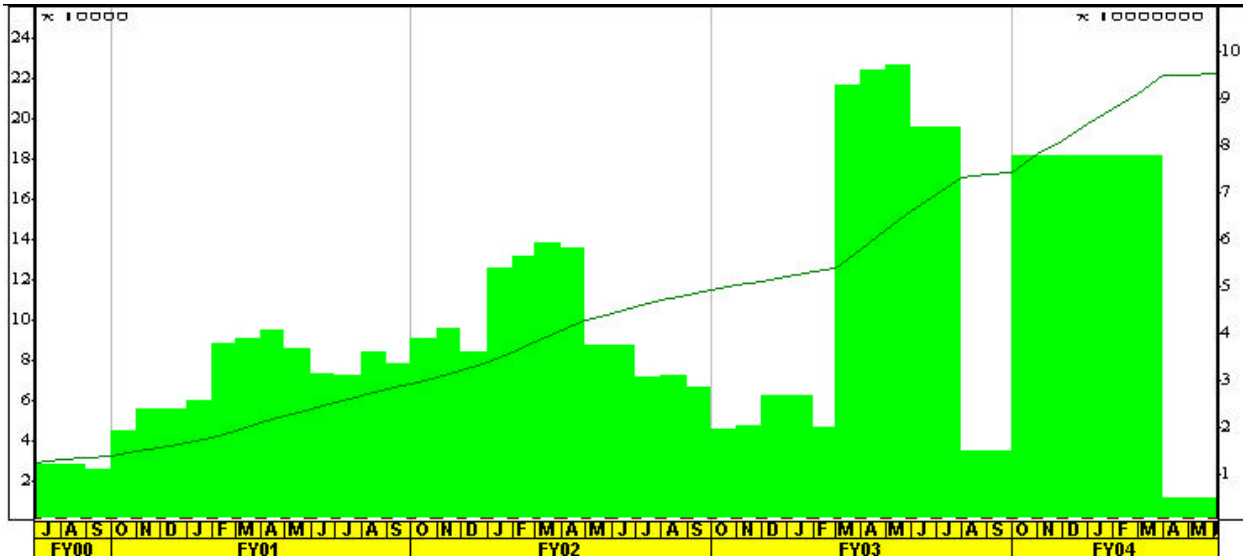
Figure B

Cost & Resource Loading Issues

1. In reviewing the sequencing of the decommissioning activities as well as the associated resource loading, it would appear that the scheduling strategy does not agree with the PBD Technical Strategy below:

   The technical strategy for completing the work scope contained within this PBD is to run one work shift beginning in FY00 and two shifts beginning in FY01and continuing through FY03. A third shift will be worked for maintenance and surveillances that would normally preclude normal operations.

   On the basis of the PBD description, there should be a rise in the manhours at the beginning of FY01. The graph below shows a sharp increase in manhours in March of 2003. We recommend that K-H review the activity interface logic relationships of the decommissioning work to ensure that the PBD Technical Strategy is reflected in the 2006CPB Schedule.



2. Based on the range of Average Daily costs found for the following activity types, it appears that the basis for estimating costs or durations may not be consistent. Assuming the Original Durations of the activities represent a continuous effort, we recommend that K-H verify that the activity Original Durations and Budgeted Costs are accurate or make the necessary modifications to the 2006 CPB Schedule.

Activity Description	Average Daily Cost – Low	Average Daily Cost –- High
Dismantlement Tasks	$697	$31,812
Proj Specif Long Lead Procurem't	$641	$22,144

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